

Amendments to the Claims:

This listing of claims will replace all prior versions and listing of claims in the application.

Claims 1-113 are canceled without prejudice or disclaimer.

Claims 114-127 are new.

Listing of Claims:

1. - 113. Canceled

114. (New) A composition comprising:

a recombinant polypeptide comprising an organelle localization signal operably linked to a protein transduction domain, wherein the recombinant polypeptide is operably linked to a polynucleotide.

115. (New) The composition of claim 114, wherein the composition is a viral vector.

116. (New) A composition according to claim 114, wherein the composition is a recombinant bacteriophage.

117. (New) A composition according to claim 114, wherein the organelle localization signal operably linked to the protein transduction domain is expressed on an exterior surface of a vector.

118. (New) A composition according to claim 114, wherein the compositions is a virus particle.

119. (New) A composition according to claim 114, wherein the polynucleotide encodes a mitochondrial protein, a chloroplast protein, heterologous polypeptide, siRNA or antisense nucleic acid specific for mitochondrial or chloroplast mRNA.

120. (New) A method for treating a mitochondrial disease comprising contacting at least one cell of a host having or suspected of having a mitochondrial disease with a vector comprising at least one protein transduction domain on a surface of the vector, at least one mitochondrial targeting signal on a surface of the vector, and a polynucleotide encoding a functional mitochondrial polypeptide, wherein the functional mitochondrial polypeptide is expressed in at least one mitochondrion of the cell.

121. (New) A cell comprising a composition according to claim 114.

122. (New) A method for producing a mtDNA depleted cell comprising: contacting the cell with at least one siRNA directed to POL γ .

123. (New) The method of claim 122, wherein the siRNA is selected from the siRNAs listed in TABLE 3 or a sequence having 80-100% homology to the siRNAs listed in TABLE 3 or SEQ IDNOs. 195574.

124. (New) The method of claim 123, wherein a target sequence of POL γ RNA inhibition is selected from the POL γ target sequences in TABLE 3.

125. (New) A kit for transfecting organelles, the kit comprising: a polynucleotide encoding an organelle localization signal operably linked to a bacteriophage lambda surface polypeptide; and bacteriophage lambda packaging components for preparing a recombinant lambda vector.

126. (New) A method for transfecting an organelle, the method comprising the step of introducing a recombinant viral vector comprising a nucleic acid to be expressed in the organelle into the cytosol of a cell, wherein the recombinant viral vector displays an organelle localization signal on a surface of the vector for directing the vector to an organelle to be transfected.

127. (New) A method for producing a cell lacking mitochondrial DNA comprising:

contacting the cell with at least one siRNA directed to a gene involved in sustaining or maintaining mtDNA or mtDNA stability.